



Recurrent jellyfish blooms are a consequence of global oscillations

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Abstract:

A perceived recent increase in global jellyfish abundance has been portrayed as a symptom of degraded oceans. This perception is based primarily on a few case studies and anecdotal evidence, but a formal analysis of global temporal trends in jellyfish populations has been missing. Here, we analyze all available long-term datasets on changes in jellyfish abundance across multiple coastal stations, using linear and logistic mixed models and effect-size analysis to show that there is no robust evidence for a global increase in jellyfish. Although there has been a small linear increase in jellyfish since the 1970s, this trend was unsubstantiated by effect-size analysis that showed no difference in the proportion of increasing vs. decreasing jellyfish populations over all time periods examined. Rather, the strongest nonrandom trend indicated jellyfish populations undergo larger, worldwide oscillations with an approximate 20-y periodicity, including a rising phase during the 1990s that contributed to the perception of a global increase in jellyfish abundance. Sustained monitoring is required over the next decade to elucidate with statistical confidence whether the weak increasing linear trend in jellyfish after 1970 is an actual shift in the baseline or part of an oscillation. Irrespective of the nature of increase, given the potential damage posed by jellyfish blooms to fisheries, tourism, and other human industries, our findings foretell recurrent phases of rise and fall in jellyfish populations that society should be prepared to face.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3549082>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

Climate Change and Human Health Literature Portal

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified